ISASC

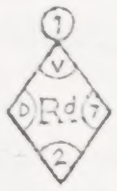
COMPILED BY M.A.C.

The first thing you'll notice about this is - that it is quite different from Bob Stein's letter. I've taken him literally and done my own thing ! As my enthusiasm leans towards research and technicalities I have biassed my letter towards the history and principles of scales. Also I draw better than I write, so there are plenty of sketches included - along with the spelling mistakes and typing errors !

DATA SHEETS When we had our first ISASC meeting last September we got in quite a muddle with terms for scales. I volunteered (fool that I am !) to draw up some sheets of terms we are all likely to need to communicate. I am enclosing a sample on Pendulum Balances for your perusal! The other sheets will cover Spring Balances, Robervals, Equal-arm Hanging scales, Steelyards, Rockers, Bismars and Miscellaneous, each sheet showing some of the rarer varieties which are sometimes difficult to put in a category at first glance.

If you are interested in having the other sheets I will copy the set and post it to you at a cost price of £1.30 plus postage etc of 12p in UK, 30p Europe, or 80p USA. I can also copy my data sheets on the Postage Rates in Britain 1839 to 1965. This enables you to date any scale made for the British market which has the postage rates marked on it.

Also I have a sheet giving the date code for the British Registration mark which appears on some weights and scales. If you would also like these two sheets, add 14p to the above price, plus extra postage of 2p UK, 20p Europe, or 8p USA. (N.B. the uneven amounts of postage are related to the weight steps).



Would you also like further sheets on the names of parts of scales ? Please let me know if you are interested and I will get down to the drawing board.

The following three descriptions are of scales from my collection. Naturally I chose examples where I have been able to unearth interesting information about their makers etc.! I have plenty of others about which I know nothing, but this is where the exchange of ideas and information via ISASC may help.

ROLLING PIN SCALE. No,.not a scale for Cordon Bleu cooks, but an unusual letter scale with a name I derived from the shape of the weights which look like the wooden pins with handles used to roll out pastry !

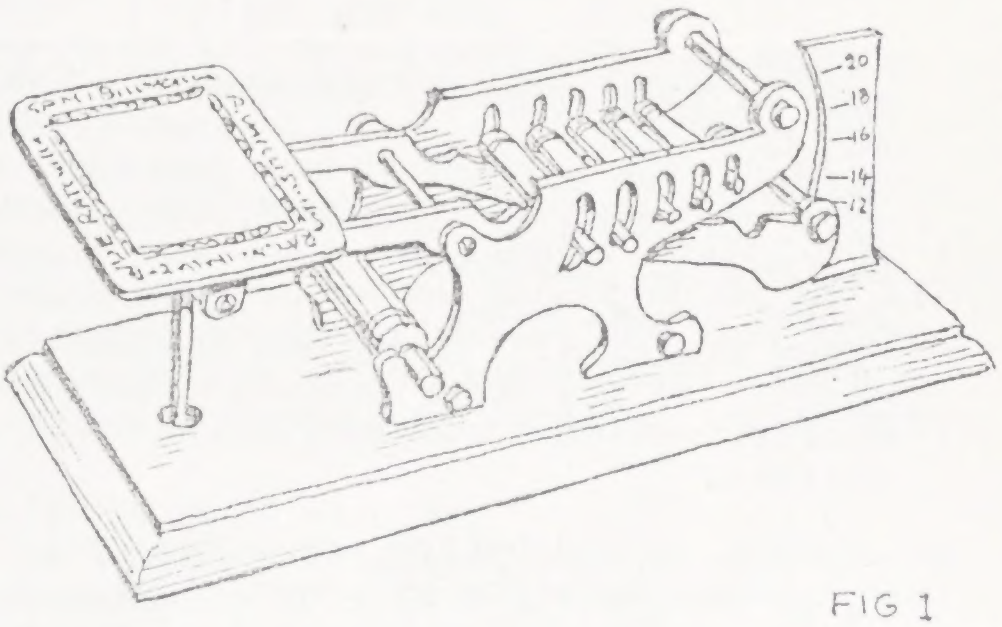


FIG 1

The principle of the scale is unusual because the beam collects enough weights to balance the load automatically, the weights being stored in a series of slots. As the beam tilts with the letter, it picks up a weight and if this is not heavy enough, it continues tilting and picks up th next weight, and so on. When equilibrium is reached the postage rate is indicated by the end of the beam against a graduated column fixed to the base. An extra weight is stored in a rack on the frame and can be added by hand to the end of the beam where notches are provided for it. This increases the weighing capacity and adds ten pence to the postage. The leg and stay which keep the letter plate level, are concealed in the wood base which has short legs.

Other versions were made, one with only three weights, and one like mine with a base of marble on an elaborate floral cast brass underframe. My example has a base of 252 x 92mm and the postage rates 1 to 10 and 12 to 20 pence. They were made by Joseph & Edmund Ratcliff of St. Paul's Square, Birmingham, to a design patented in 1840 by Robert Willis, Jacksonian professor at Cambridge University. The Ratcliffs were makers of a variety of letter scales, gas fittings, chandeliers, etc, and general brass founders. Joseph was no longer a partner by 1864, hence the date of manufacture was between 1840 and 1864, which is confirmed by the postage rates.

GUINEA SCALES. This small pocket set was for weighing the Guinea, Half-guinea and Quarter-guinea. The appropriate weight was placed in the left hand pan where it was retained by four small turned up tabs. The right hand pan was for the coins and had only three tabs turned up, to facilitate easy access for weighing a number of coins in rapid succession. Concave sides on the pans made it possible to get hold of the smaller coins or weights.

A special feature of the set is the centre lever which is pushed upwards by a spring to immobilise the beam. When ready to weigh, the lever is depressed by a finger so releasing the beam. Sticking out at the front of the scale is a steel slot gauge for checking the size of the coins, in addition to the weight. This gauge can be swung sideways for storage.

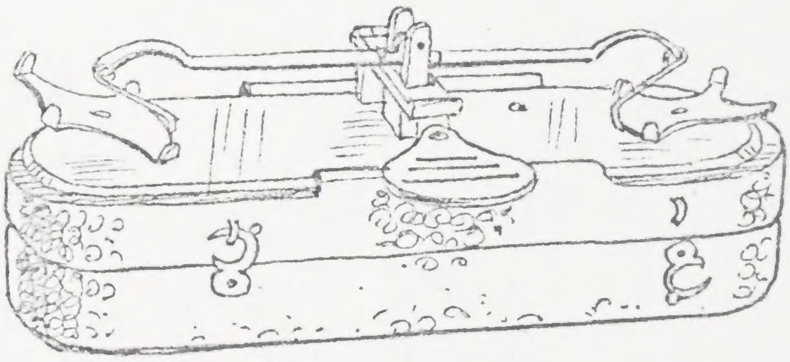


FIG 2.

The balance is on a sheet brass base stamped S.HENRY Inventor. below a crown at on end, and BY ROYAL PATENT at the other. In use the base rests in grooved projections on the top of the lid where it is retained by a pin through a hole. When stored the gauge is swung under the beam and the scale is slid out from the grooves and placed in the case. The case itself, is covered with black shagreen and lined with pink silk. Inside the lid is the maker's label of instructions, which also states that the balance can be obtained from Mr.Pinchbeck of Cockspur Street, price 10s 6d. (This is one of the Pinchbeck family who gave the name to the imitation gold, and who died in 1783).

Solomon Henry of Swithin's lane,London. patented the design in 1774, No.1080 as "An instrument or machine for weighing the coin of this Kingdom, and also for ascertaining whether the said coin is counterfeited, or any base metal mixed therewith...." He advertised his balance, for example in the Liverpool General Advertiser of 26th April 1776, in which he claimed "....approved by his Majesty in Council, Bank of England and Bankers." "Among the many counterfeit guineas detected by the Patent Gauge, being full weight...were found four shillings and sixpence below standard." Henry was apparently an inventor of diverse talents, judging by his other patents which were for a universal lock, burglar alarms, watering machines and a multi-coloured stamp to defeat counterfeiters.

The date of manufacture of the balance is dtermined by the patent, and Pinchbeck's death, to the period 1774 to 1783. My example is in a case 132 x 43 x 37 mm. Henry also made another version on the steelyard principle, where the weight pan is replaced by a sliding weight. Examples were also made without a maker's name, and also with B.STUBBS stamped on the base.(I have been unable to trace him, so far.)

YARN BALANCE.. A tiny scale used to determine the 'counts' of various yarns. Men in the trade needed to know the count to tell them 1. how fine the threads were that formed the cloth being tested, or 2. how many lengths of thread had been spun from a pound of wool, cotton or linen etc.

At the left hand end of the beam there is a thick wire hook which also works as a weight, so the beam is pre-loaded. At the other end is a thin wire hook for the yarn to hang on. A pointer projects sideways from the front of the instrument, and the correct balance is indicated when the beam is parallel to this pointer. The latter is always maintained in the horizontal by a pendulum weight. The beam is supported by a short brass pedestal only 60 mm high, which has a black painted sight board behind it to aid observation of the exceptionally thin wire beam and wire pointer.

When using the balance, a piece of cloth is cut to the size of a metal template which is supplied with the set. Threads are pulled from the sample and placed on the right hook, until there are enough to balance the heavier hook at the other end. The number of threads required provides the 'count' of the yarn. Various templates are supplied for cotton, wool. linen etc. Additional wire weights are also included to divide the number of threads by a factor of 10 for very fine yarns, and to double the value for people who prefer to cut samples twice the size of the template for easier handling, or greater accuracy.

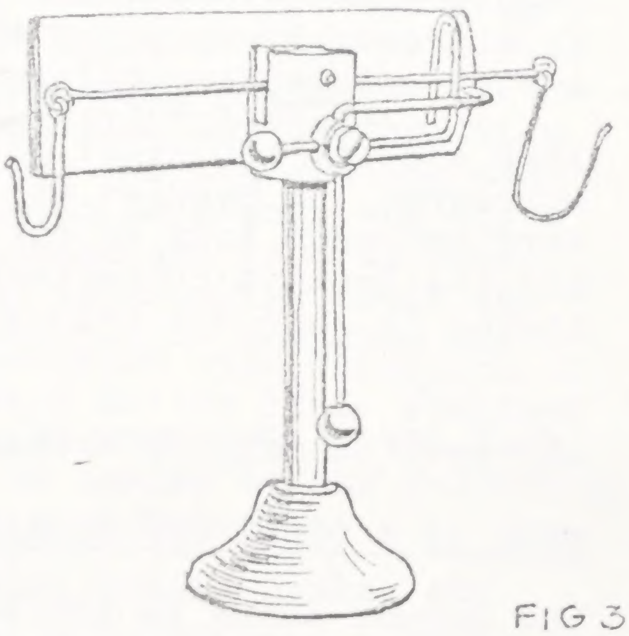


FIG 3

The instrument is contained in a rectangular case covered in black leathercloth and impressed with the maker's name and address. JOHN NESBITT. 42 Market street, Manchester. Inside, the case is fitted with blocks and pads to fit the instrument and its accessories, and lined with violet velvet. A loose sheet of instructions is enclosed.

Nesbitt was an ironmonger, machinist and manufacturer of yarn testing equipment. The firm claimed establishment in 1784, and were still in existance in 1959. Identical balances were made by Geo.Thomas & Co Ltd, and J.Casartelli & Son, both of Manchester. The design was patented by H.B. Barlow in 1886, No.6703, and is quite outside the English scale making tradition.

I have three pages of supplementary instructions put out by Geo. Thomas & Co Ltd, which goes into great detail.

COIN SCALES IN PRINT. At last Spinks have reprinted that fascinating book 'Money Scales and Weights' by Sheppard and Musham. It was first published in 1923 and has many black and white illustrations, many of unusual scales. The numerous examples described were accumulated at Hull Museum by Sheppard who was Curator there, but alas, they can no longer be seen as they were bombed during World War II. WARNING. There are many minor errors and incorrect dates, the most glaring of which are corrected in the Addenda at the end of the reprint. You can buy it from Spink & Son Ltd, 5,6 & 7 King Street, St.James's, London SW1Y-6QS.

SCALES FOR VISITORS TO BRITAIN. Most scales are dotted around Britain in twos and threes in numerous museums and private collections. However, there are a few outstanding places where scales can be seen in large numbers. For scales and weights of all types 1. The Science Museum, South Kensington, London. 2. Castle Museum, York. and an absolute MUST is 3. The Avery Historical Museum, W & T Avery Ltd, Smethwick, Birmingham. (N.B. This is a private museum for which you must obtain permission to visit, from the Curator.)

For coin scales visit 4. The Tolston Memorial Museum, Huddersfield, Yorkshire and if you are in the area, good small collections are to be seen at 5. Warrington Museum, Warrington, Cheshire and 6. Bankfield Museum, Halifax, Yorkshire. A huge collection is kept at 7. The Wellcome Medical Museum, Euston Road, London. but again permission is required because they are kept in storage and not on display. In fact, the bulk of most museum collections is in store and it is well worth while giving them the few days warning required for them to get the scales out for you to see.

BUT to see the cream of British collections come to our house ! ! Come and see scales, handle scales and talk scales. We are only 50 minutes from London by air, 4 hours by train and 6 hours by car. Come to Newcastle Airport or Durham Railway station and we will collect you.

We would very much like to meet some more of you fellow scale enthusiasts. We have already had great pleasure from knowing the Steins, the Sturgesses, the Wormsers, the Needles and we feel we know Albert Eaches through his wonderful tape recorded tour of his Scale Loft. Of course we have much enjoyment from all the British collectors too, but there aren't enough of them ! We are hoping to meet Utz Schmidt from Germany soon, and hope that he will be able to introduce more European members to ISASC. We are looking forward to Bill Doniger's visit in the Spring when we will lose our voices talking scales and have an orgy of exchanging !

WHEN IS A SCALE NOT A SCALE.

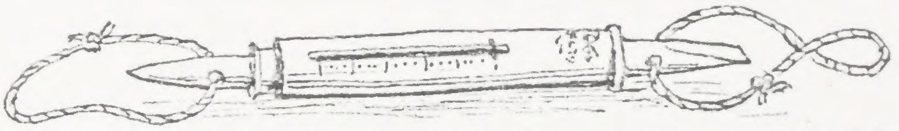


FIG4.

The gadget shown in Fig 4 was made by Geo. Salter & Co for use in World War I. It is exactly the same as the common brass cased spring balance, but instead of having a suspension ring and hook, it has two strong loops of cord fitted to tool shaped steel ends. One end is a screwdriver and the other a spike. The purpose ? -- to test and reset the firing mechanism on a Lewis machine gun. Therefor, although it is so similar to a scale, it is not used for WEIGHING but for checking mechanical force or pressure. I have had one in my collection for several years, but now that I have discovered its purpose I have taken it off the 'official' list and placed it among the 'fascinating gadgets' collection.

'Proper' scales were also used for non-weighing functions. An item I recently heard about was the pilot of an early 'wood and string' aeroplane of 1910 who had no engine rev counter or any other instrument for checking the performance of the engine. So, he borrowed the local butcher's spring balance and tied one end to a sturdy stake in the ground and the other end to the tail of his aeroplane. He then started the engine, opened the throttle wide and asked a friend to read the 'pull' of the propellor as indicated on the balance.

MODERN SCALES. I originally started collecting only old and antique scales, but my eye was often caught by some of the modern balances. Eventually I decided that several are so interesting, that it would be worth having a few in the collection to compare and contrast with the old ones. To give some idea of what I mean, I have nine stylus balances used for checking the weight of record player arms. Several of them are unusual in the method of use or mechanical principle. One for example uses the rare method of moving the LOAD along the beam until equilibrium is achieved. Also, I have a folding spring balance for luggage, two bismars made by Linex for weighing letters, which are also paper knives and rules, and a modern version of Hall's pendulum letter balance made in silver plate by Christofle. The most noticeable characteristic of all of them is how cheap they are !, and as our local museum Director is always saying, "Today's gadget is Tomorrow's antique".

EARLY ENGLISH SCALEMAKERS. The earliest maker we have traced, so far, is Samuel Neale, of London 1644 - 1689, although we have the initials of one or two earlier makers. Samuel passed on his expertise to his apprentices, including Joseph Hart, who later became a Master in his own right and trained the famous John Snart. Joseph's son Benjamin was apprenticed from 1693 to 1700 to Snart (after the death of Joseph). Benjamin in his turn, trained the well known Samuel Read in 1734, who passed on the knowledge to many later masters.

I could go on and on with a fascinating and complicated web of knowledge passed from father to son, from master to apprentice and from husband to wife. These important additions to our INDEX are the result of painstaking research in the records of the London Livery Companies at the Guildhall Library. If you don't know what this entails, imagine spending seven hours a day (holidays) coping with faded ink, bad handwriting and Dog-Latin ! I must confess I left most of the Latin to Diana, who did a marvellous job. It was hard work, but the excitement and rewards were worth every minute of it. We now have a wealth of information about the 18th century makers especially. (Incidentally, Norman, We now know the truth about Mercy Meymott.)

We have a host of names, but have never seen examples of the work of some of them. If anyone has scales, or knows of scales by the following, we would very much like to have a description or a photograph ; -

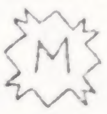
17th C. Samuel Neale, Joseph Hart, Sylvester Bayly, Edmund Jenks, etc.

18th C. Benjamin Hart, James Greene, Silas Jennings, Percivall Lamb, Elizabeth Lamb, Dod Phythian, Thomas Winspeare, John Swithin, Richard Sleigh, John Smelt, John Lane. etc.

Surprisingly, it is sometimes more difficult to find out about more recent makers. If anyone can help with details of the following, we would be delighted :-

B. Stubbs, London c1780	Triumph Scale Co, USA c 1900 ?
A. Develey, France c 1800	Olmstead Stove Co. c 1842
Tivoli c 1900	M.M.&S Ltd. UK c 1930

Also, who made all those pendulum letter balances in Germany and Austria ? We have seen examples marked and others marked COLUMBUS, all made for the British market and graduated in oz etc.



ANY HELP REQUIRED ? Having spent many hours researching dates and other information about scalemakers from 1600 to 1940 AD. I would be delighted if members would feel free to use my INDEX. Just drop me a line with the makers name (and address if you have it) and I will send back any information I have for your records or newsletter.

ALSO, if any members would like drawings doing for their newsletter, send me photographs of the scales or weights and I will send sketches back, suitable for Xerox copying (or equivalent).

If anyone is interested in how I got an ISASC heading on my letter - I typed a short sheet on A4 sized paper (8¼ x 11¾), and placed it over the flyer(included with Bob's letter), so that the heading shows at the top. By the way Bob, I fully endorse all your instructions about the format, except the single sided printing. The postage would have been prohibitive (an extra £8) for single sides 8 sheets, because airmail copying paper is not available in Sunderland.

Well, thats my letter over for three years ! I thank Bob Stein for this opportunity to learn all about your collections and experiences. If it wasn't for Bob's immense energy we would still just be talking about a society.

Kind regards to all members,

Michael Crawforth

Newsletter. February 1977.

P.T.O.

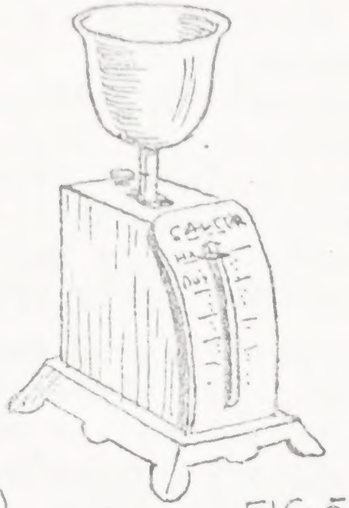


FIG 5

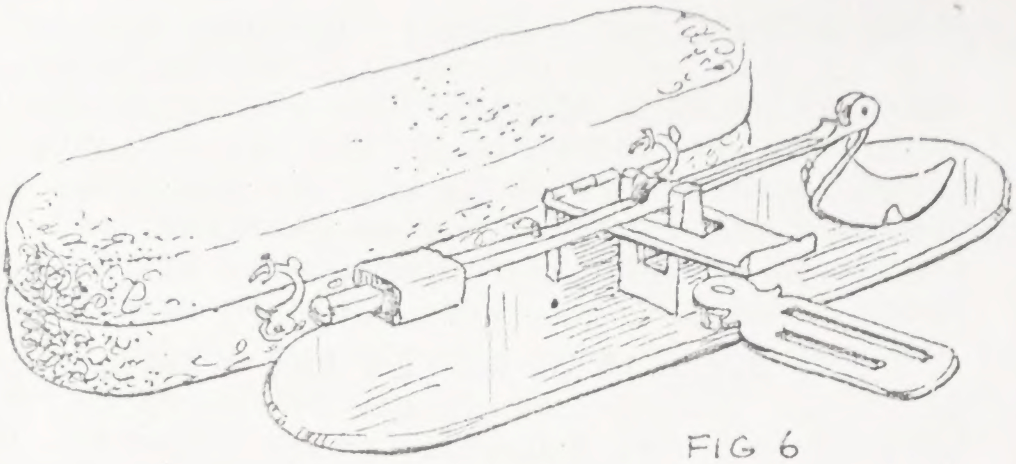


FIG 6

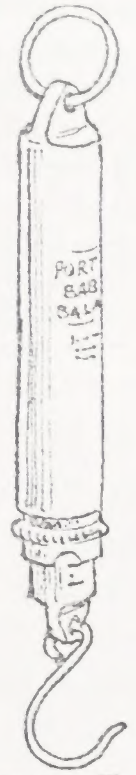


FIG 7

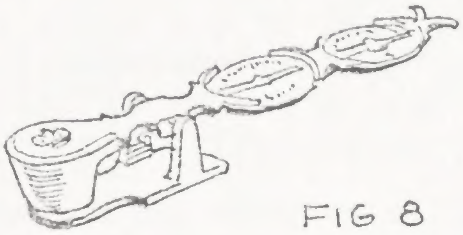


FIG 8

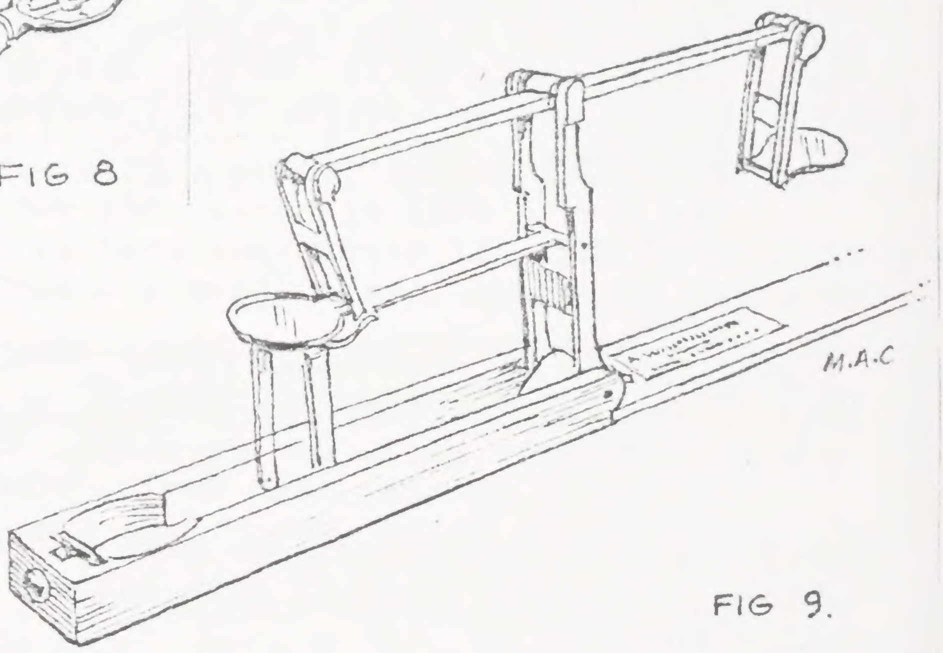


FIG 9.

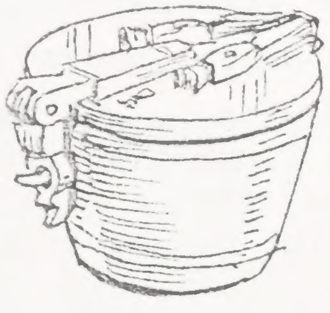


FIG 10

SCALES FOR EXCHANGE.. I have the following scales available for swapping only, not for sale.

A. Pendulum letter balance shown as No. 6 on the enclosed Data Sheet, with two position weight, BUT plain not decorated. c1910 Height 250mm

B. Pendulum letter balance shown as No. 5 on the Data sheet, made by Parnell, London. c1865 length 105mm.

c. Yarn balance, as described above, but with blue velvet lining, by John Nesbitt. c1890.

D. Midwifes pocket spring balance for weighing babies, Fig 7 above, marked Portia USA. c 1930 ?

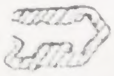
E. Egg balance, spring type in bow front case, Fig 5 above, by Salter. Marked for DUCK and HEN eggs. c 1930. Ht 120 mm

F. Smaller than usual spring letter balance, a more elegant version of Fig 5 with flat letter plate. c 1930. Ht 75 mm

G. Sovereign balance of the standard design, Fig 8 above, with slot gauges for Sov and ½-Sov. c1835.

H. Folding Guinea balance in narrow wood case, self erecting when opened. One of A.Wilkinson's more rare designs with enlarged pan for using flat coin style weights. c 1785. *Exchange for rare item.

I. Guinea balance similar to the one by S.Henry, described above, Fig 6. but steelyard version with no name. c 1780 Very rare. Exchange for equally rare 18th C item.

J. Set of nesting weights with hinged lid stamped  and each inner cup decorated with concentric circles round the rim, and marked 1,2,4,8,16. (the centre ½,½ are missing). Ht. 45 mm Diam at top 52 mm. Rare. Will exchange for scales only. Fig 10

K. Book. A Treatise on Weighing Machines, by G.A.Owen 1922. A work on the principles of scale design and construction, with several good illustrations of scalesof all types.

PENDULUM BALANCES

A pendulum balance has a weight fixed to an arm which swings upwards when a load is being weighed. It continues swinging up until a point of balance is achieved and the weight is usually indicated on a graduated arc.

An essential feature of a pendulum balance is that the arm takes up a different angle for loads of different weight, and because it finds its own point of equilibrium, it is called a self-indicating scale.

There are many variations, and the pendulum principle is used in some shop scales, person scales and large warehouse platform scales. The drawings show only the smaller simpler varieties for weighing letters, coins, etc. which collectors are most likely to acquire :-

FIG 1. Coin balance made by Anscheutz & Co, London c1765, for Guineas, Johannis and Moidore all current in Britain at the time. Brass balance folds flat into mahogany case only 10mm thick. Note the graduated arc is also the weight. A hydrostatical version was also made.

FIG 2. Egg balance by an unknown maker, probably German, for the English market, c1930. Graduated 0 to 4 oz x 1/16 oz. Brass egg cup and levers with cast iron base. The common version had a round plate for letters. Less common with glass pan for photographic chemicals c1910.(both)

FIG 3. Letter balance by Joseph Illfelder, London.c1870. also by Perry & Co. London, N.B. Paris, etc. Graduated 0 to 12oz with $\frac{1}{3}$ & $\frac{2}{3}$oz indicating the date. All brass with spring steel letter clip having one prong extended to form a hook for small parcels.

FIG 4. Letter balance by G.Riddle, London. c1840. Graduated o to 4oz x $\frac{1}{4}$oz. All brass, some versions have engraved floral decoration all over. A modified version for coins was made.(see Sheppard & Musham Fig 74.).

FIG 5. Letter balance by Cooke & Sons,London, c1865. also by Perry & Co. J.Heeley & Sons, Birmingham. Parnell, London. etc. Patented by N.R. Hall in 1863. Grad. 0 to 2oz. All brass with steel clip. Twin pointer version patented by Hall in 1866. Also rare versions held by an eagle on a branch in cast brass, and twin pointer design for coins.

FIG 6. Letter balance by unknown maker, probably German for English market. c1910. Brass and cast iron. Commonly without elaborate cast decoration. Also version with hinged weight having two ranges of weight.

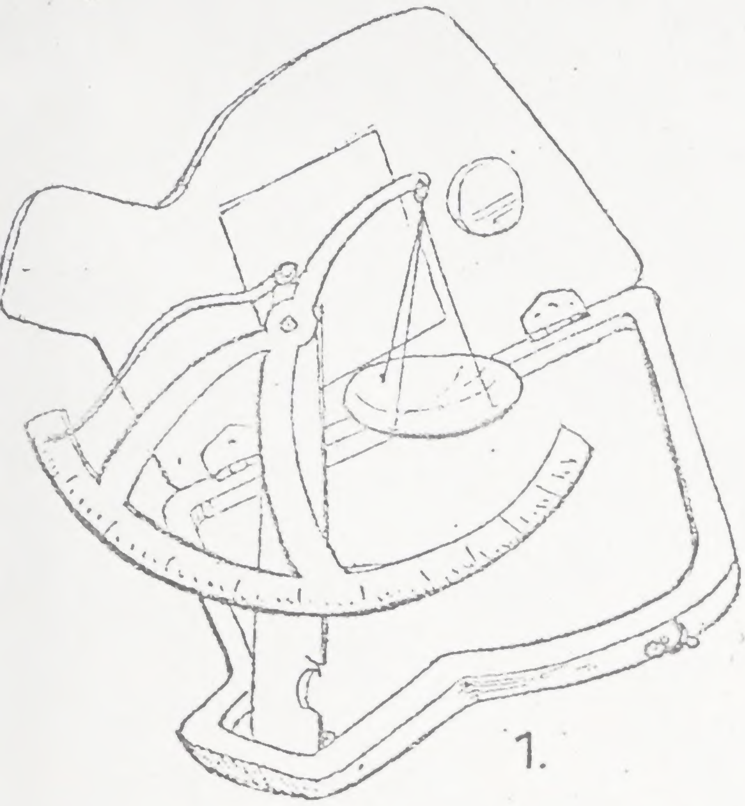
FIG 7. Letter balance by unknown maker, probably Austrian, for English market, c1910. Graduated 0 to 16oz x $\frac{1}{4}$oz. Pressed tinplate and brass plate. Has two pendulum weights called BILATERAL system. Pointer and graduated ring rotate in opposite directions.

FIG 8. Coin balance by N.B. Paris. for silver and gold Francs. c1900 (?) Nickel plated brass with steel wire coin clip.

FIG 9. Letter balance by unknown maker, probably Austrian for English market, c1900. Graduated 0 to 4oz x 1/8oz. Pressed tinplate. Bilateral system with pendulums swinging out in opposite directions.

Various other designs of pendulum for paper, yarn, market goods etc.

PENDULUM BALANCES



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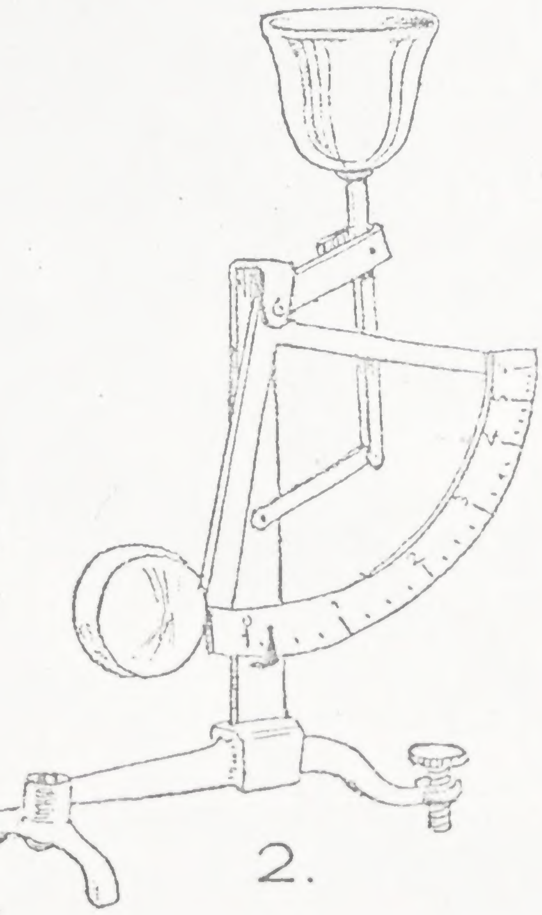

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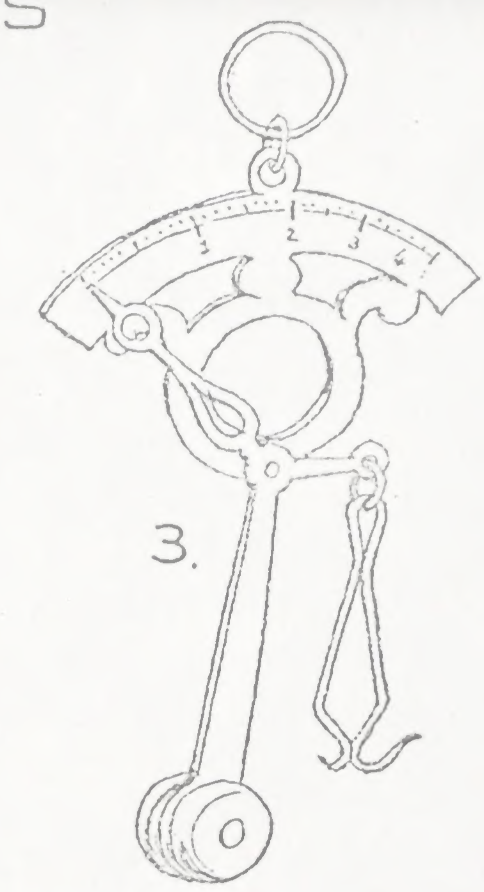

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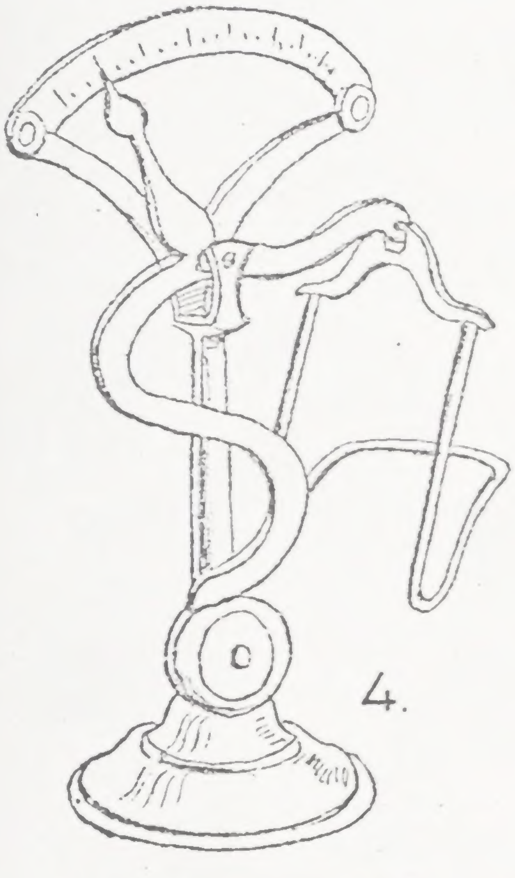

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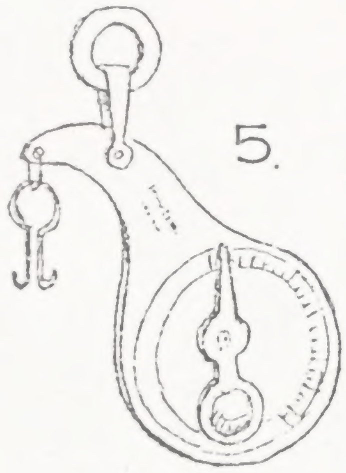

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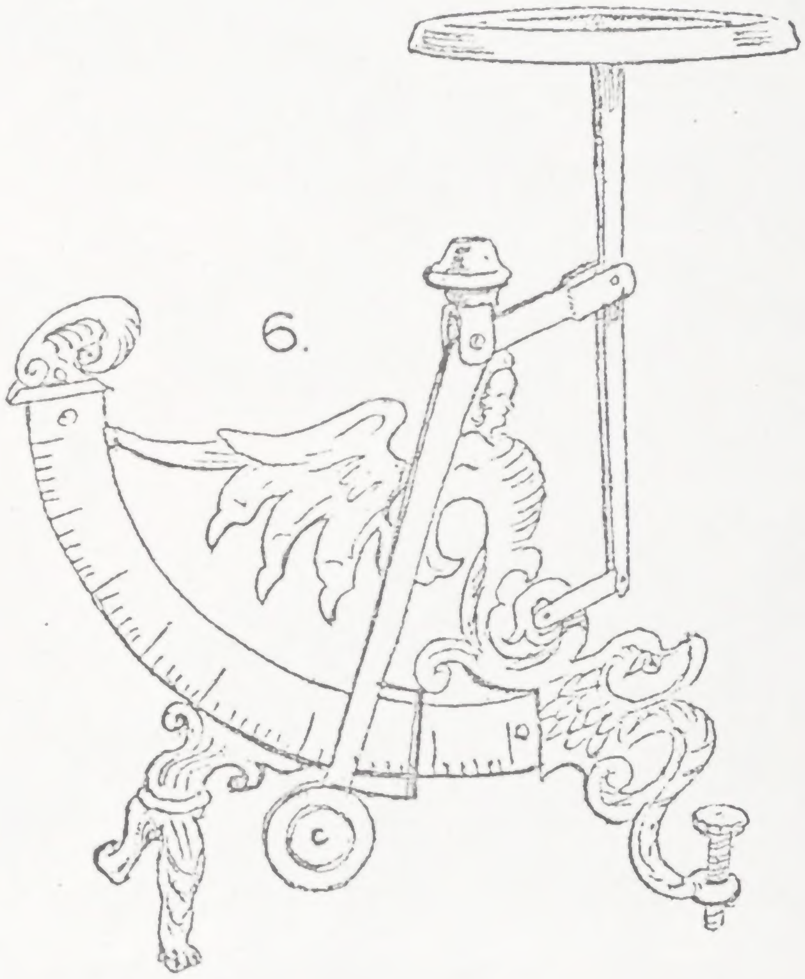

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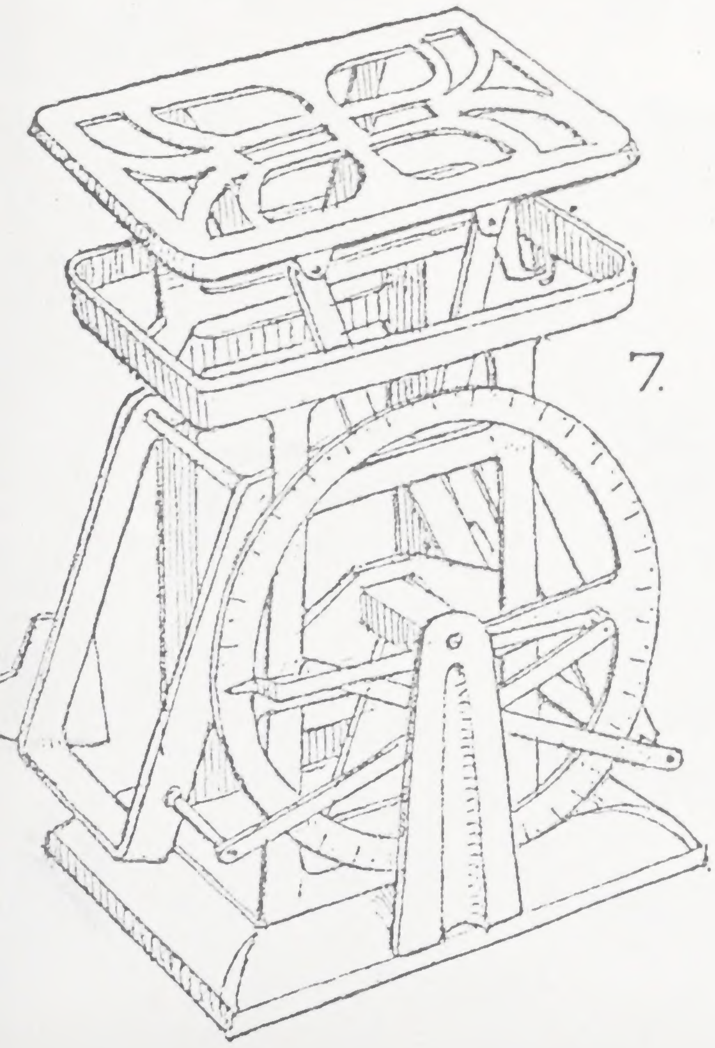

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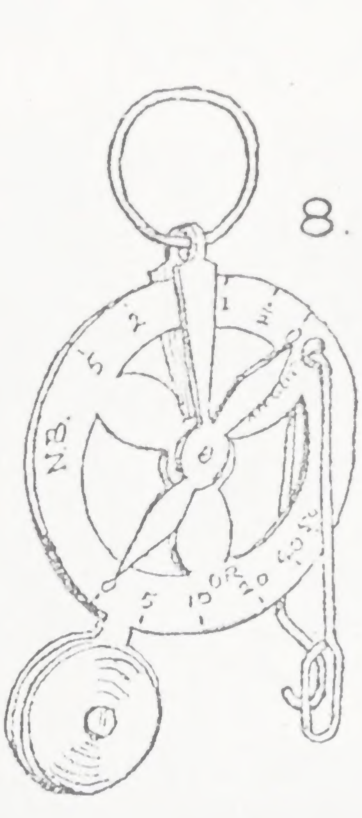

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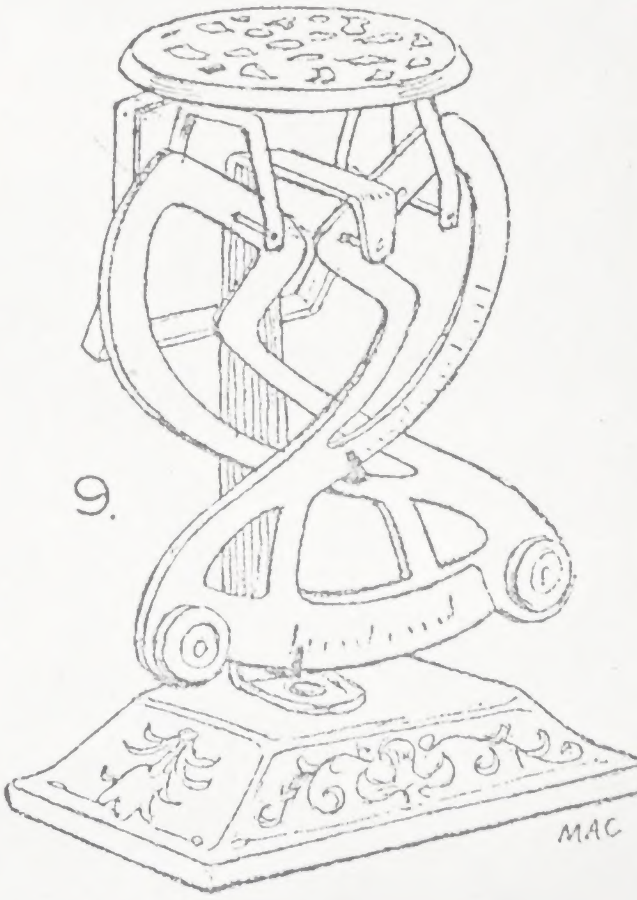

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